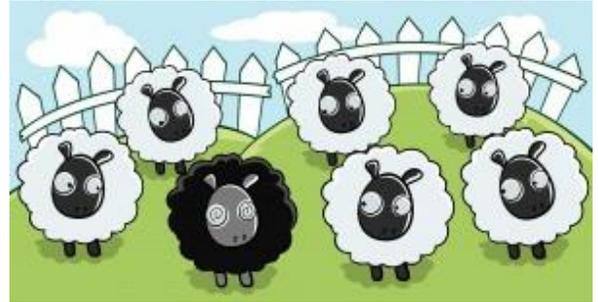


SPSS ASSIGNMENT #4**50 points****Z scores and outliers**

Z scores can be used to detect outliers. If any are detected, it is up to the researcher to decide whether to keep them or kick them out. An argument can be made for both decisions.

For this assignment, we will standardize the scores for touch, PSS total, MICRO optimism, MACRO optimism, ST daily ave., and perceived vitality. Instructions to calculate Z scores are provided in the SPSS applications at the end of chapter 5.

PART A

For each of the 6 variables above, compute the Z scores. Find the mean, standard deviation, and variance for each raw score distribution and its corresponding Z distribution.

Fill in the missing values in the table below. Remember to look at the [decimal reporting guidance](#) document. If you report the to the wrong number of decimal places, you will be giving away some of your points.

(18 points, 1/2 point for each correct answer)

TOUCH	Mean	Standard deviation	Variance
Raw scores			
Z scores			

PSS TOTAL	Mean	Standard deviation	Variance
Raw scores			
Z scores			

MICRO optimism	Mean	Standard deviation	Variance
Raw scores			
Z scores			

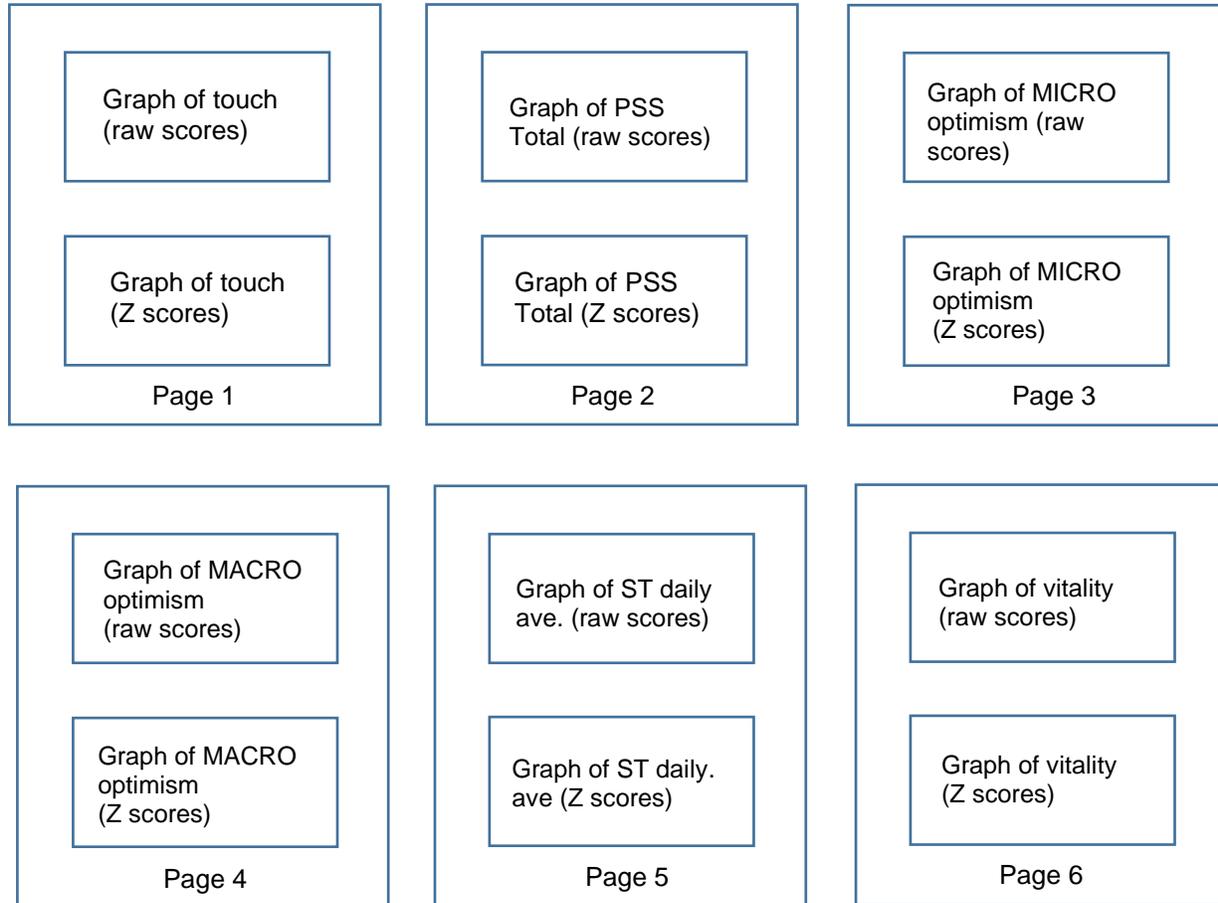
MACRO optimism	Mean	Standard deviation	Variance
Raw scores			
Z scores			

ST DAILY AVE	Mean	Standard deviation	Variance
Raw scores			
Z scores			

PERCEIVED VITALITY	Mean	Standard deviation	Variance
Raw scores			
Z scores			

PART B

Create a “bar chart of frequencies” for the raw **and** Z scores for each of the 6 variables. You will need to copy and paste them into a word document, 2 graphs/page (see below). **IMPORTANT:** To more easily detect outliers in the assignment, tell SPSS to “**display frequency tables**”



You will be asked to upload this 6-page document into Canvas
(12 points + 2 points if arranged as shown above)

Using the criteria that if Z is greater than (i.e. beyond) ± 2.58 , were there any outliers within any of the 6 variables? If yes identify the variable(s) and the RANGE of score(s) that represent outliers in their raw score format. For example, for PSS_total, if all the outliers fell between 13 and 20, just write “scores 13 through 20” below. If a variable has no outliers, write none. (12 points)

	Outlier(s) in raw score format or “none”
TOUCH	
PSS TOTAL	
MICRO OPTIMISM	
MACRO OPTIMISM	
ST_DAILY AVERAGE	
VITALITY	

For each of the 6 variables, compare the bar charts for the raw scores and Z scores. Hint – don't overthink. The next 3 questions are meant to be super easy! **(6 points)**

How does the shape of the raw score distributions and Z score distributions compare?

How do their y-axis compare?

How do their x-axis compare?

BONUS POINTS!

Copy and paste all relevant SPSS results tables into a single document (doc, docx, pdf). Hi-light those numbers you used in PART A of this assignment, and only those numbers. Upload this to Canvas. Do this correctly and receive **5 bonus points**.



ALL numbers in this assignment must be reported to the correct number of decimal places. Be absolutely certain you know how to round!